Imperial Valley Study Group
Transmission Planning Collaborative
Meeting Minutes: November 18, 2004

These minutes attempt to capture the decisions and critical discussions and disagreements of the meeting; they are not an attempt at transcription, nor necessarily in the order in which they occurred. They were recorded by Clare Laufenberg Gallardo of the CEC; Brian Keel of SRP and Dave Olsen also contributed to these minutes.

In Attendance:

Jesse Ante – CPUC	David Barajas – IID
Tom Blair – City of San Diego	Don Bryce – USBR
Ron Connelly – USBR	Carrie Downey – IID
Mark Etherton – IID	Roger Hill – Sandia Labs
Son Hoang – LADWP	Robert Jackson – SDG&E
Brian Keel – SRP	David Le - CAISO
Clare Laufenberg Gallardo – CEC	Phillip Leung – SCE
Greg Merrigan – CalEnergy	Dave Olsen – CEERT
Milt Percival – Western DSW	Dale Stevens – MEHC
Juan C. Sandoval – IID	Harold Todus – SDG&E
Duane Torgerson – WAPA	Jonathan Woldemariam – SDG&E

Future Meeting Dates
Technical Work Group (sub-group): will meet December 7, 2-5 PM at SDG&E in San Diego. The group will set future calendar at that meeting.

Imperial Valley Study Group (full group): probably will meet Thursday January 20 at Sempra in San Diego.

General
Dave Olsen chaired the first meeting; indicated he had been asked by the CEC (as part of the IEPR process) and the CPUC Study Group to lead this sub-group. Dave will present the results of today's meeting to the next STEP meeting in December. Future meetings could be chaired by another person.

The group adopted the name "Imperial Valley Study Group" (IVSG) to reflect its focus on the entire Imperial Valley and all types of renewable energy within it rather than just the Salton Sea Geothermal Area. Public documents could initially refer to the IVSG, "formerly known as the Salton Sea Study Group," to tie together the two names.

The California Energy Commission (CEC) was asked to provide a website for the group, and will investigate that and report back. The website would include *public* versions of meeting agendas, meeting notes, and other documents as they become available.

Dave voiced the need to gather political support for the resulting project, and to anticipate opposition by building broad group support. He encouraged Study Group members to invite representatives of Imperial, Riverside and San Diego counties to participate, along with any other stakeholders who might be interested in or affected by the IVSG transmission construction plan.

The need for signed confidentiality agreements with participants may arise.

Ground Rules

The Study Group adopted these Ground Rules by consensus:

- Cooperative group interaction
- Good faith effort to reach consensus on key issues
- Facilitated meetings; minutes approved by all. The leader of each meeting has authority to assure that no one person dominates, and that no one organizational or political agenda is advanced. Minutes of each meeting will be approved, with any corerctions, by the attendees at the next meeting of the Study Group and any subgroups. Minutes will be posted on the IVSG website.
- Transparent planning assumptions, data access
- Meeting leader will clarify agreements & disagreements
- Individuals have responsibility to speak up if they disagree
- Work toward a plan acceptable to all parties
- Separate report by dissenting parties if necessary

Study Process will:

- Identify transmission alternatives to export up to 2,000 MW;
- Identify phases to match market/geographic plant construction;
- Develop a conceptual plan of service including lines, substations, RAS/redispatch facilities for the best alternatives;
- Include powerflows run by the TOs;
- Determine impacts at key delivery points vs. basecase;
- follow WECC/NERC planning and control area-specific criteria;
- Develop cost estimates for each alternative;
- Use ISO economic evaluation to rank alternatives by ratepayer benefit/cost; and
- Assume that each party pays its own costs.

Steering Committee

The full group will (at least temporarily) function as the steering committee. Subgroups to address, e.g., environmental, engineering, etc., could be assembled as needed. Senior management will be brought into the process as early as possible and reasonable by each entity.

Technical Work Group (TWG)

This core technical workgroup will meet more often than the larger review group. It will make decisions that will affect parties who may not be represented at the time the decisions are made. Therefore, there will be an effort made to invite and encourage

parties who did not attend today's meeting, to participate in this group. Dave Olsen will attempt to contact and encourage APS, MWD, and CFE to participate.

The full IVSG will provide policy direction to the TWG, and the TWG work will be reviewed by the IVSG. The TWG will also try to address EIRs and coordination efforts.

The suggested institutional members and their likely representatives on the TWG are listed below. An asterisk (*) indicates organizations that are firm members:

*ISO – David Le
*IID – David Barajas & Mark Etherton
*SCE – Phillip Leung
*SDG&E – Jonathan Woldemariam
*Western – Leonard York
*CEERT – Dave Olsen
*CalEnergy – Dale Stevens
APS – Bob Smith, contact, to be invited
CFE – Alberto Gonzalez, contact, to be invited
MWD – Ann Finley, contact, to be invited

Study Methodology

The methodology proposed is similar to one being used in the Tehachapi Study Group. The IVSG will focus first on evaluating alternatives capable of exporting 2,000 MW of renewable generation from the Imperial Valley. After it has determined configurations capable of transporting the full 2,000 MW it will then segment the development into phases. The Phase 1 (near-term) goal might be to have approximately 600 MW on-line by 2010, to match an accelerated geothermal plant development schedule indicated by CalEnergy to be feasible. A second (mid-term) phase might add an additional 1,000 MW. A third (or fourth) phase would add additional transmission upgrades until the entire 2,000 MW can be exported. Construction of transmission in each phase will be triggered by market demand for the power.

Powerflow studies of alternative upgrade configurations will be run against two base cases: the WECC Heavy Summer case, and the Light Autumn case (to check viability under minimum load conditions). Transmission owners performing the powerflow studies of alternatives on their systems can share powerflow maps instead of sharing underlying data. The TWG will decide dispatch scenarios and sink points. The TWG will use this thermal screening to narrow the number of alternatives to be studied further.

The ISO will then use production cost modeling to evaluate the remaining alternatives on an economic basis. The ISO does not have the staff to evaluate all the alternatives and modifications discussed today but will perform an economic analysis after the field is narrowed. This economic analysis will provide a basis for reducing the study alternatives to a final few. Stability, post-transient analysis and voltage support studies will be performed for the final alternatives. Stability studies are necessary especially because of voltage concerns West of Devers. Economic and technical study results will be used to recommend a final upgrade plan.

Target dates for completing this work are:

Thermal studies:	by April 1, 2005
Review by STEP/adjacent systems (e.g.,SRP, CFE) that may be affected	TBD
Economic modeling by ISO	April-May
Stability, post-transient, voltage studies	May
Plan for consolidated permitting	TBD
Final recommended plan	June 2005

This final report will present a detailed plan for entire build-out that:

- Ensures reliability; least-cost/impact;
- Proposes triggers for each construction phase;
- Proposes an approach for consolidating/expediting the permitting of the entire build-out;
- Proposes specific CPCN filing(s) for IOUs;
- Propose project(s) for presentation to public power Boards of Directors;
- Proposes a financing/cost allocation – cost recovery plan;
- Details possible joint public/IOU ownership/operation.

Initial Study Alternatives

To give the IVSG a place to start, IID, CalEnergy, SDG&E, and CEERT met in October to develop a draft set of alternatives. Juan Carlos Sandoval from IID presented these five alternatives for review in the November 18 meeting. (One-line diagrams of these alternatives were distributed in the meeting). He noted that IID has been very supportive of exporting geothermal and other renewables from its territory before the formation of the IVSG, and that it believes collaborative planning provides a good basis for addressing seams, ROW and permitting issues. IID wants to continue to control all transmission assets in its territory.

IID will connect the new geothermal plant (Salton Sea Unit 6) to Bannister at 230 kV under its current PPA with CalEnergy. The upgrades defined as common to all alternatives increase IID export capability by 600 MW, compared to today.

General comments on alternatives included:

- Concern about the Devers – Palo Verde (DPV) line, which is already congested. Congestion West of Devers would become even more of a problem if the ISO board approves construction of PVD 2. IID is concerned that increased PV-Devers flows may affect the IID 230 kV system.
- Juan Carlos Sandoval noted that the Blythe substation is prepared for 230 kV, but that a Midway-Blythe upgrade would not be in a first phase.
- In Alternative 5, Juan Carlos Sandoval said IID thought that an Imperial Valley-North Gila upgrade would probably not be necessary to export 2,000 MW from the region.

Suggested modifications

- Combine alternatives 1 and 2 into a new Alternative 1, with 230 kV lines equivalent to 500 kV transfer capability. The ROW for 230 kV lines would be easier to secure

than for 500 kV lines, they cover different terrain and population patterns, and present a way to export power into San Diego which is needed.
- Include the DPV2 line in the basecase (depending on outcome of the December 2004 ISO Board meeting).
- Run sensitivities with and without DPV2, regardless of the ISO Board outcome;
- Add an alternative B to new (re-numbered) alternative 3 that would tie San Diego North to the SCE system (Valley Substation), using the LEAPS route; and
- Add alternative B to new (re-numbered) alternative 4 to study a proposed Hassayampa – North Gila 230 kV line.

This results in four Alternatives, and two options (3B and 4B), making six configurations proposed for initial study.

Follow-up

Mark Etherton agreed to renumber the alternatives after incorporating the modifications suggested at today's meeting. The revised alternatives will be sent to all participants with the minutes of the meeting today. The table below summarizes the one-line diagrams of the revised alternatives. Mark's updated alternatives will provide electrical and physical representations, with conceptual drawings for the modifications suggested today. There will also be a legend on the drawings, indicating line voltages, as this was missing in the version prepared for the meeting.

Participants should review these for accuracy. The Study Group agreed to use e-mail to verify that these alternatives are what the group intends to study. Please e-mail Dave Olsen (or any other member of the (TWG) to suggest any concerns or corrections. The TWG will then finalize the study alternatives at its next meeting (December 7).

Attachment 1

Revised Imperial Valley Transmission Feasibility Study Alternatives

The following table summarizes the additions and upgrades that are shown in the attached information provided by IID. This information is IID's understanding of the revised alternatives as determined at the 11/18/04 meeting. A copy of the one-line diagrams which this information attempts to summarize is attached for your review and comments.

Description **Alternative**	**1**	**2**	**3a**	**3b**	**4a**	**4b**
IV – S.D. Central (new 500 kV)		X			X	X
IV – S.D. North (new 230 kV)	X					
IV – Highline – North Gila (new 500 kV)					X	X
Midway – Parker (new 230 kV)	X	X	X	X	X	X
Salton Sea – west (upgrade to 230 kV 800 MVA)	X	X	X	X	X	X
New western geothermal area – S.D. Central (new 230 kV)	X	X			X	X
New western geothermal area – S.D. North (new 230 kV)			X	X		
New western geothermal area toward Midway (new 230 kV)	X	X	X	X	X	X
Midway – Highline upgrades to accommodate new eastern geothermal area (to 230 kV 800 MVA)	X	X	X	X	X	X
El Centro – Highline (new 230 kV)	X	X	X	X	X	X
El Centro – IV (upgrade 2 lines to 230 kV 800 MVA)	X	X	X	X	X	X
Blythe – Knob (upgrade to 230 kV 400 MVA)	X	X	X	X	X	X
Knob – Pilot Knob (upgrade to 230 kV 400 MVA)	X	X	X	X	X	X
Knob – eastward (upgrade to 230 kV 400 MVA)	X	X	X	X	X	X
LEAPS project – San Diego North				X		
APS/IID Palo Verde – Yuma project						X